

Amendments to the Drawings:

Examiner Fletcher and Applicant's counsel, Junqi Hang, discussed the drawings on September 16, 2009. While Figures 2-6 were regarded as acceptable, some remaining solid black areas in Figure 1, with particular reference to areas around numeral 8, should be eliminated in favor of clear hatching. A replacement drawing sheet showing corresponding amendments in Figure 1 is submitted herewith and is believed to be in compliance with 37 C.F.R. 1.121(d). Reconsideration and withdrawal of this objection as stated on pages 2-3 of the Office Action is respectfully solicited.

Attachment: Replacement Sheet

Remarks

Claims 1, 3-7, 10-13 and 15-18 are pending in the application, of which claims 1-4 and 7-14 are rejected. By this paper, Applicant amends claims 1, 3, 4, 7 and 10 to provide greater clarity; cancels claims 2, 8, 9 and 14 and adds new claims 15-18. Support for the claim amendments can be found throughout the specification, the claims, and the drawings as originally filed, and particularly at lines 27-28 and 30-32 on page 1, lines 11-14 and 19-23 on page 3, lines 13-15 on page 5, lines 29-32 on page 8, lines 1-13 on page 9, and line 31 on page 11 to line 4 on page 12 of the original specification, and Figures 2 and 5. No new matter is introduced by these claim amendments. Applicant respectfully traverses the rejection of the claims; however, Applicant amends the claims in order to further the prosecution of this application.

Claim Rejections - 35 U.S.C. § 103

*Rejection of Claims 1-2 over Lampotang et al.
(USPN 5,779,484), hereinafter "Lampotang") and
Gordon et al. (USPN 3,662,076), hereinafter "Gordon")*

The Examiner has maintained rejections of claims 1 and 2 under 35 U.S.C. § 103(a) over *Lampotang* in view of *Gordon* (the Office Action, pages 4-5).

Reasons for the rejections as stated on pages 4-5 of the instant Office Action are substantially similar, if not word-for-word identical, to the corresponding reasons stated on pages 3-4 of the Office Action dated January 6, 2009. Applicant's relevant remarks previously submitted on July 6, 2009 are not reproduced herein in favor of brevity. However, Applicant wishes to present the following remarks particularly in view of the instant claim amendments.

As amended, independent claim 1 specifies that the simulator is for simulation of subcostal retractions, and further that said means includes an elastic pulling strap attached to the inside of the skin approximately in the middle of the area where retractions occur, and that

said means and said artificial lung are coupled so that when said means are actuated to pull in the chest skin, said means and said artificial lung are adapted to move synchronously.

The term "retractions" is generally defined as visible sinking in of the chest wall with inspiration in a child with respiratory difficulty; and the term "subcostal retractions" refers to retractions observed below the rib cage or the sternum, which is a very specific area of the body. *See* for instance lines 11-21 on page 1 of the original specification. Subcostal retractions is a very rare but serious condition that is caused by severely restricted airways in children and infants.

Neither *Lampotang* nor *Gordon* teaches the claimed limitation or is able to simulate the subcostal retraction. The Examiner admits that *Lampotang* "fails to specifically teach a means for pulling down the chest skin providing an external visible depression of the skin below the sternum of the torso; or where the means includes a mechanism adapted to pull the chest skin in a synchronous fashion with the at least one lung raising and lowering the chest; or that the chest skin has an elastic pulling strap attached to the inside of the skin approximately in the middle of the area where contractions occur [claim 2]." *See* page 4 of the Office Action.

Gordon fails to cure *Lampotang*'s above-mentioned deficiency. Contrary to what is asserted on page 14 of the Office Action,¹ and as stated on pages 6-7 of Applicants' Amendment filed on July 6, 2009, *Gordon* uses vertical push rods 28 for pushing against the chest skin of the simulator torso; the push rods 28 of *Gordon* are neither attached to the body nor are they flexible or capable of pulling down the chest skin. Therefore, the use of a flexible strap in claim 1 for pulling down the chest skin so that the chest skin moves from forming a visible depression to returning to a resting level, is neither taught nor suggested in *Gordon*, as *Gordon*'s use of its rigid push rods 28 to push up the chest skin such that the chest skin changes from

¹ On page 14 of the Office Action, the Examiner further argues that "one of ordinary skill in the art would recognize the interchangeability of the skin movement mechanism of *Lampotang-Gordon*, and the claimed invention to produce skin movements reflective of chest retractions."

forming a visible raising and to returning to its resting level. In addition, as stated on page 7 of Applicants' Amendment dated July 6, 2009, there is no need to attach push rods 28 to the chest skin, while it is necessary to affix Applicant's pulling strap to the chest skin to draw the skin inward to form a visible depression.

On page 14 of the Office Action, the Examiner argues that *Gordon* teaches both raising and lowering of the chest skin through the action of the push rods 28. *Gordon*'s lowering of its chest skin is merely a returning from its preceding raised position to its steady resting position. Again, as stated herein above, *Gordon* does not teach the chest skin is visibly depressed, nor does *Gordon* teach or suggest a mechanism to pull down the chest skin to cause it visibly depressed.

The area below the sternum is a very soft area. A simulator designed to simulate subcostal retractions must be able to represent the soft area. The simulator according to claim 1 uses an elastic strap, which well accommodates the need for representing the soft subcostal area. As mentioned above, *Gordon* does not teach or suggest that the push rods are attached to the skin, or are functional to pull down the skin to form a visible depression. Even if *Gordon*'s push rods could be modified to be attached to the skin or to be able to pull down the skin, the testing skin area with resultant depression would be formed against the rigid push rods and therefore not soft.

Claim 2 has been cancelled.

Reconsideration and withdrawal of the rejection of claim 1-2 under 35 U.S.C. 103(a) over *Lampotang* in view of *Gordon* is respectfully solicited.

Rejection of Claim 3 Over Lampotang and Gordon and Thoman (USPN 4,606,328, hereinafter "Thoman")

The Examiner has rejected claim 3 under 35 U.S.C. § 103(a) over *Lampotang* in view of *Gordon* and *Thoman* (the Office Action, pages 5-6). Reasons for the rejections as stated on pages 5-6 of the instant Office Action are substantially similar, if not word-for-word identical, to the corresponding reasons stated on page 5 of the Office Action dated January 6, 2009. Deficiency of *Lampotang* and *Gordon* in teaching required features of claim 1, from which claim 3 depends, is stated above in relation to claim 1. Reconsideration and withdrawal of the rejection of claim 3 under 35 U.S.C. 103(a) over *Lampotang* in view of *Gordon* and *Thoman* is respectfully solicited.

Rejection of Claims 4, 9, and 11-14 Over Lampotang in View of Ingenito et al. (USPN 4,932,879, hereinafter "Ingenito")

Previously issued rejections of claims 4, 9 and 11-14 under 35 U.S.C. § 103(a) over *Lampotang* has been withdrawn. See page 14 of the Office Action. However, the Examiner has newly rejected claims 4, 9 and 11-14 under 35 U.S.C. § 103(a) over *Lampotang* in view of *Ingenito*. See pages 6-8 of the Office Action.

As amended, claim 4 specifies that the flexible means has an initial slack. By this is achieved that the plates will move freely when the pneumatically driven mechanism is inactive, for instance, the compliance is normal. Due to this slack, the plates are free to move within the limits of normal inflation and deflation of the lung.

In *Lampotang*, the rod and piston 114, 112 have to be moved along the plate 120. The plate 120 is, therefore, not free to move unrestricted, as being confined by the rod and piston 114, 112.

Ingenito does not teach a flexible means having an initial slack for compliance altering wherein the first plate is free to move relative to the second plate wherein the pneumatically driven mechanism is not in use.

Although a flexible strap is well known *per se*, it is not known to utilize this element the way it is being used in the present invention. Specifically, it is not known to provide slack to the flexible element so that the plates are free to move unhindered within certain limits.

Claims 9 and 14 have been cancelled. Claims 11, 12 and 13 depend from claim 4 and are, therefore, in allowance with respect to claim 4.

Reconsideration and withdrawal of the rejection of claims 4, 9, and 11-14 under 35 U.S.C. 103(a) over *Lampotang* in view of *Ingenito* is respectfully requested.

*Rejections of Claims 9 and 14 Over Lampotang
in view of Berndtsson (USPN 4,318,399, herein after Berndtsson*

The Examiner has newly rejected claims 9 and 14 under 35 U.S.C. § 103(a) over *Lampotang* in view of *Berndtsson*. See pages 8-9 of the Office Action. Claims 9 and 14 have been cancelled. Withdrawal of the rejections is respectfully requested as the rejections are moot.

*Rejection of Claims 7-8 Over Lampotang over Johnson
et al. (USPN 5,394,766, herein after "Johnson") and
Thu et al. (USPN 6,336,047, herein after "Thu")*

The Examiner has maintained rejections to claims 7 and 8 under 35 U.S.C. § 103(a) over *Lampotang* in view of *Johnson* and *Thu* (the Office Action, pages 9-11).

Reasons for the rejections as stated on pages 9-11 of the Office Action are substantially similar, if not word-for-word identical, to the corresponding reasons stated on pages 8-9 of the Office Action dated January 6, 2009. Applicant's relevant remarks previously

submitted on July 6, 2009 are not reproduced herein in favor of brevity. However, Applicant wishes to present the following remarks particularly in view of the instant claim amendments.

As amended, independent claim 7 recites a medical patient simulator comprising, among other things, a torso having at least two actuators being arranged on the right and left sides of the backside of the torso, wherein the at least two actuators are air cushions situated near the outer surface of the simulator to act between a rigid part of the simulator and a surface upon which the simulator is placed.

On page 9 of the Office Action, the Examiner admits *Lampotang* does not teach the claimed feature of a torso having two actuators arranged on the backside of the torso for simulation of muscle movement. Neither does *Lampotang* teach or suggest the claimed limitation that the two air cushion actuators are situated near the outer surface of the simulator to act between a rigid part of the simulator and a surface upon which the simulator is placed.

Johnson fails to cure *Lampotang's* above-stated deficiency. As stated on page 9 of Applicants' Amendment dated July 6, 2009, *Johnson* teaches that elements 50 and 50' of robotic human torso are left and right shoulder rotacs for movement forward and back to pivot about the clevis pins 54, 54'. Contrary to *Johnson* wherein the rotacs 50, 50' are disposed within the torso body for providing forward and back shoulder movements, the simulator of claim 7 recites that the air cushion actuators are situated outside of the torso, and more particularly on the backside of the torso, for simulation of muscle movement wherein inflation and deflation on the air cushion actuators result in shaking or spasm of at least a portion of the body.

Thu fails to cure the above-mentioned deficiencies of *Lampotang* and/or *Johnson*. As stated on page 9 of Applicants' Amendment dated July 6, 2009, *Thu* is directed to a communication system between training sensors and electrodes of a defibrillator, and in particular to a system having a plurality of sensors attached to the manikin to effect a wireless and bi-directional communication. *Thu* does mention spasms but provides no explanation as to how these spasms can be simulated.

Claim 8 has been cancelled.

Reconsideration and withdrawal of the rejection of claims 7-8 under 35 U.S.C. 103(a) over *Lampotang* in view of *Johnson* and *Thu* is respectfully requested.

Rejection of Claim 10 over Lampotang in View of LeRoy (USPN 4,003,141, hereinafter "LeRoy") and Eggert et al. (US2004/01579199, hereinafter "Eggert")

The Examiner has maintained rejections of claim 10 under 35 U.S.C. § 103(a) over *Lampotang* in view of *LeRoy* and *Eggert* (the Office Action, pages 11-12).

Reasons for the rejections as stated on pages 11-12 of the instant Office Action are substantially similar, if not word-for-word identical, to the corresponding reasons previously stated on pages 10-11 of the prior Office Action dated January 6, 2009. Applicant's relevant remarks previously submitted on July 6, 2009 are not reproduced herein in favor of brevity. However, Applicant wishes to present the following remarks particularly in view of the instant claim amendments.

As amended, claim 10 recites a medical patient simulator comprising a head having a rigid part covered with a skin, where one or more air cushions are arranged between said rigid part and said skin in at least one fontanelle area on the head of the simulator, and where the one or more air cushions are designed to be filled with air in order to simulate an increased pressure in the brain and provide a swelling in the fontanelle area that can be detected by palpation.

As stated on page 10 of Applicants' Amendment dated July 6, 2009, the Examiner admits that *Lampotang* fails to teach a simulator head having one or more cushions in at least one fontanelle area on the head of the simulator wherein the air cushions are filled with air to simulate an increased pressure in the brain and provide a swelling in the fontanelle area, as

required in claim 10. Neither does *Lampotang* teach the claimed limitation that the air cushions are arranged between the rigid part and the skin and a swelling in the fontanelle area can be detected by palpation.

LeRoy fails to cure *Lampotang*'s above-mentioned deficiency. The Examiner argues that *LeRoy* teaches one or more air cushions (abnormal pressure creating means 30. *See* page 11 of the Office Action. As stated on page 10 of Applicants' Amendment dated July 6, 2009, the pressure creating means 30 is located adjacent the dura membrane and underneath the firm plastic outer layer 18. Therefore, *LeRoy*'s air cushions are placed within a firm and rigid plastic shell of the head. Due to this, detection of a simulated swelling of the cushions by mere palpation would be hindered and rendered inaccurate, if not all impossible.

Eggert also fails to cure the above-mentioned deficiencies of *Lampotang* and/or *LeRoy*. As stated on page 10 of Applicants' Amendment dated July 6, 2009, *Eggert* teaches simulation of edema in the tongue or swelling in the pharyngeal air reservoir 590. The tongue is not arranged between a rigid part of the manikin and a skin, as specified in amended claim 10.

The Examiner presses for the issue that using air cushion actuators is old and well known and extensively states on pages 12-13 of the Office Action the consequences in the event that an Official Notice is not traversed. Applicants respectfully submit that the claimed invention concerns not just about using air cushion actuator, rather the use of air cushion actuators as specified and discussed above in relation to claim 10.

Reconsideration and withdrawal of the rejection of claim 10 under 35 U.S.C. 103(a) over *Lampotang* in view of *LeRoy* and *Eggert* is respectfully requested.

New Claims 15-18

Claims 15-18 have been newly added to specify further details according to several particular embodiments. As stated herein above, support for the new claims can be found in the original application, and more particularly at lines 29-32 on page 8, at line 31 on page 11 to line 4 on page 12 of the original specification, and Figures 2 and 5. Allowability of new claims 15-18 is respectfully solicited.

CONCLUSION

In view of the foregoing, Applicant respectfully asserts that the application is in condition for allowance, which allowance is respectfully requested.

Please charge any fees or credit any overpayments as a result of the filing of this paper to our Deposit Account No. 02-3978.

Respectfully submitted,
OYSTEIN GOMO

By /Junqi Hang/
Junqi Hang
Reg. No. 54,615
Attorney for Applicant

Date: November 18, 2009

BROOKS KUSHMAN P.C.
1000 Town Center, 22nd Floor
Southfield, MI 48075-1238
Phone: 248-358-4400
Fax: 248-358-3351